Phil Adamson
Fermilab Accelerator Division

# Main Injector Weekly Summary

Friday 1st June 2007

# Collimator trips

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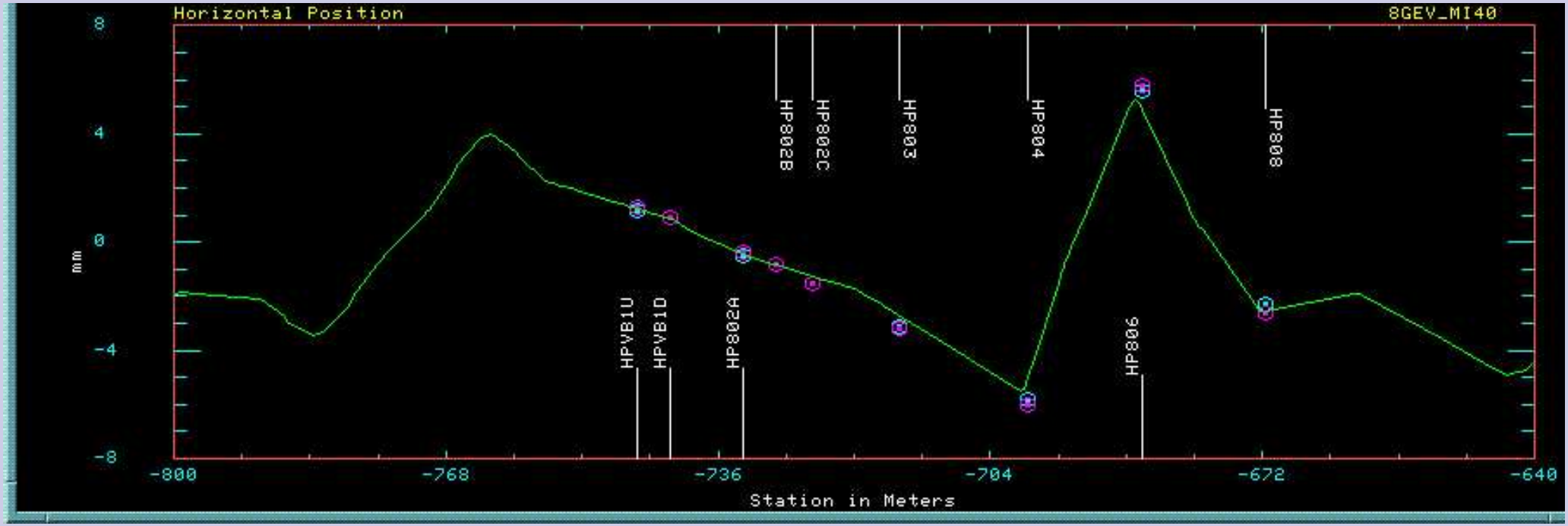


- A number of trips on losses at MI-8 collimators
- A single errant pulse—loss monitors read > 300 R/s (average trip level is 5)
- Horizontal position at 838 off by 6mm
- Orbit distortion traces back to Booster
- See large orbit error throughout cycle in booster, on at least some of the bad pulses
- Booster / ops hunting for a corrector that misses its ramp

# Stacking

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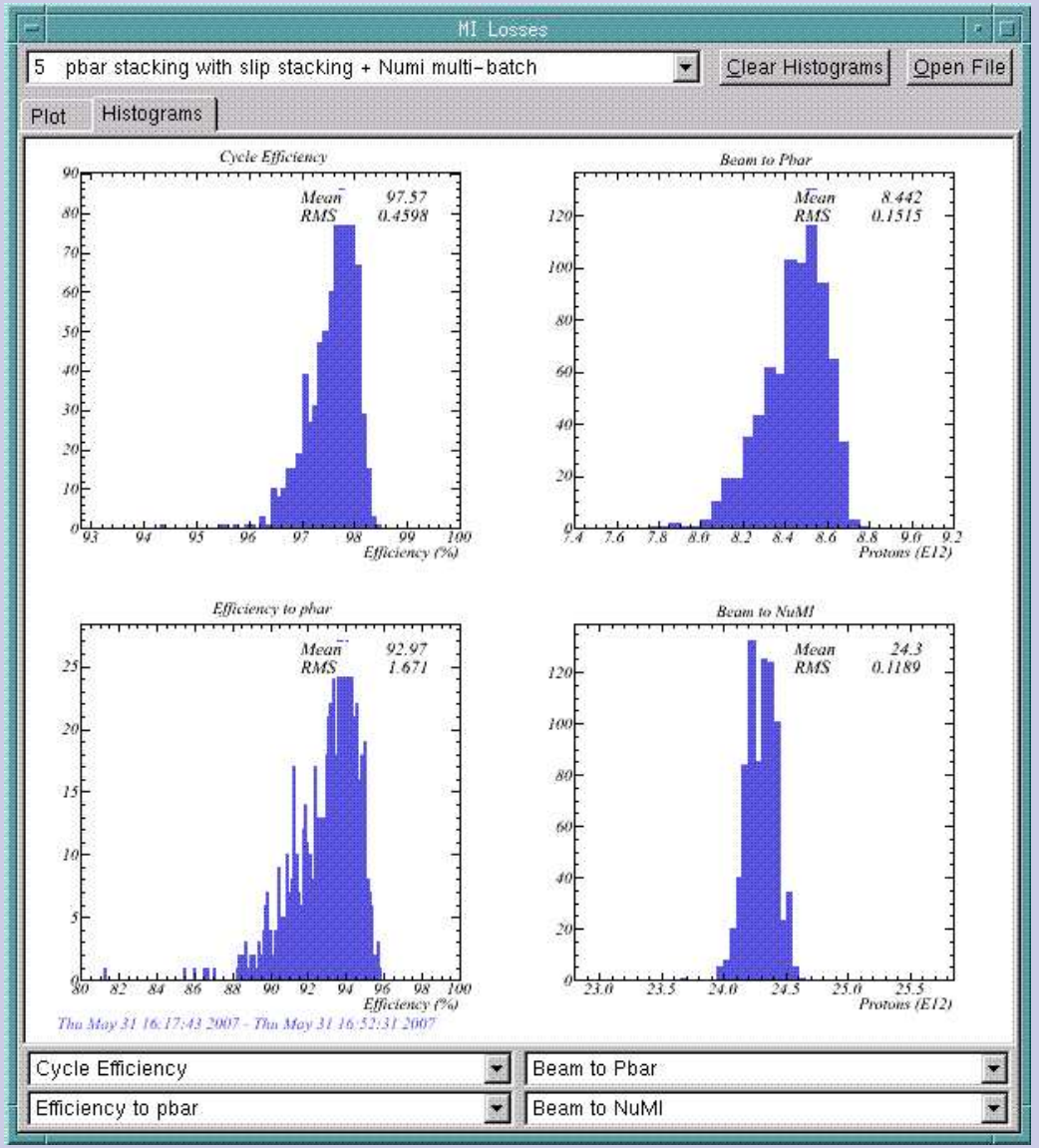


- Slip-stacking has been sub-par this week
- Some good booster tuning yesterday enabled us to tune back up to 93% efficiency for the slip-stacked batch and about 8.5E12 protons per pulse to the pbar target

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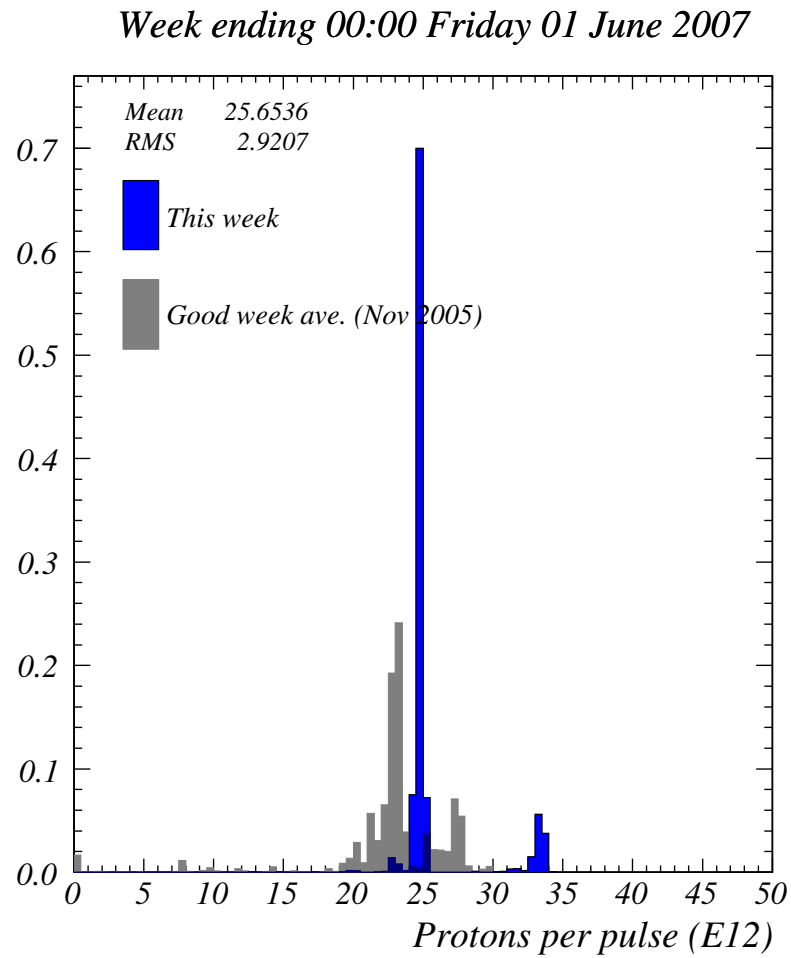
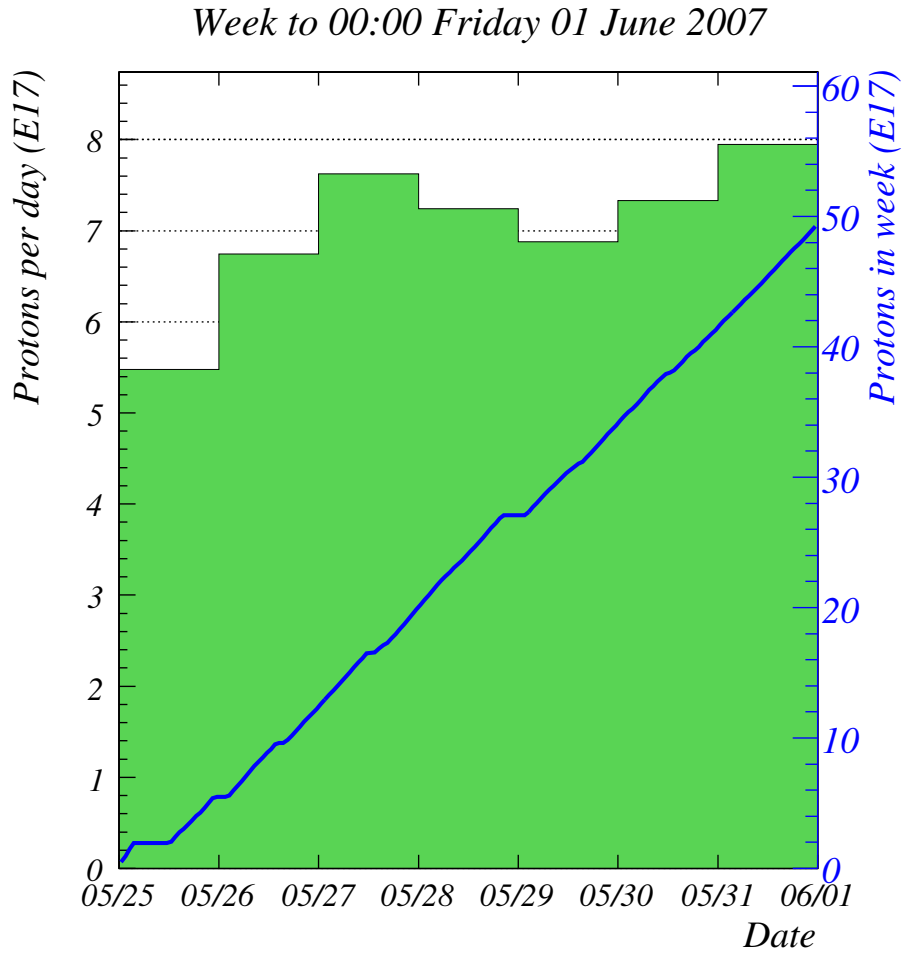
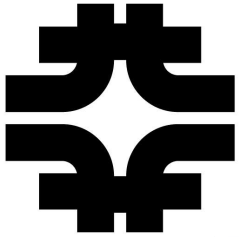



- Consistent beam to NuMI all week
- Some periods of downtime





# Tevatron

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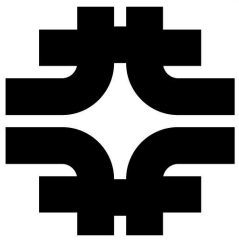
- Protons:
  - ⇒ Acceleration efficiency: 95.4%
  - ⇒ Coalescing efficiency: 85.9%
- Pbars:
  - ⇒ Acceleration efficiency: 98.7%
  - ⇒ Coalescing efficiency: 91.5%



# Issues

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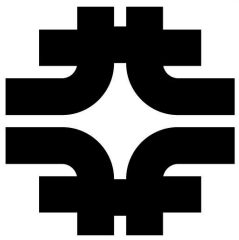
- We started the week with 11/12 bend supplies, and a PLC problem preventing communication with the MI40 bend supplies.
  - ⇒ These problems are now fixed - we're back to our full complement of supplies, and can talk to them all.
- Had a couple of "QCL kills the stash" incidents over the weekend.
  - ⇒ No smoking guns
- Had a collimator loss abort on MiniBooNE beam, which caused the MI abort to kill a pbar transfer on Friday's shot
  - ⇒ Change permit arrangement at MI8—day shift with small stash.
- We are leaking 40 gal/day LCW from an RF station.



# Studies

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- 11-batch slip-stacking (Seiya)
  - ⇒ Studies continued, and will continue
- $2A de-accumulation (Morris)
  - ⇒ New $2A ramp ready to go
  - ⇒ Wait for a day-time shot setup on a non-Friday
- 11-batch mixed-mode to pbar and NuMI targets (all)
  - ⇒ Study for a couple of hours to make sure things work
  - ⇒ Expect impact on operations to be small
  - ⇒ Want to run in this mode for a week well before the shutdown, so need to get this preparatory study done soon

# More Studies

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- MI8 collimator studies (Brown)
  - ⇒ Small amount of scraping, parasitic
- MI ring collimator study (Johnson, Brown)
  - ⇒ 2 hours with a 0.5s $2E every 15-20s
  - ⇒ Measure loss distribution from primary collimator, compare with simulation
- Barrier stacking (Chou, Wildman)
- 150 GeV lattice measurements (Yang)

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